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March 11, 1963
JH-P-215

25X1A

[REDACTED]

SUBJECT: Engineering Report No. 7309

Enclosed for your information please find two (2) copies */ received*
of our Annual Field Service Report.

Charlie

CMH:jkh

Enclosures

25X1A

cc: [REDACTED]

ENGINEERING REPORT NO. 7309

TITLE: Annual Field Service Report

Calendar year 1962

COPY NO. 3 DATE Feb, 21, 1963

PREPARED FOR: Customer No. II

25X1A


Project Engineer

25X1A


Manager, Field Engineering & Service

25X1A


Vice-President - Chief Scientist

ANNUAL FIELD SERVICE REPORT

This report consists of various tabulations and summaries which indicate the performance of the Mark II Trackers, our Technical Representative in the field, and our Maintenance and Overhaul support at the factory, for the calendar year from January 1, 1962 to December 31, 1962. Exhibit I is a monthly summary of Tracker activity and performance, with totals shown for the year. Exhibit II is a resume of the number of hours of use of each Tracker, and a total of the hours run since the last M & O. Exhibit III contains a tabulation of malfunctions and remedial action taken, and a listing of the repetitive failures, with the appropriate action taken by us to eliminate the problem areas. Exhibit IV contains a Tracker Performance Comparison for the last four years.

As the Exhibits indicate, we are maintaining our Tracker reliability at a high point. A more detailed analysis of the records would show that 15 out of 29 Trackers performed at 100% reliability, while a majority of the remainder had only one malfunction each. Reliability percentage based on footage completed would show a 96.2% reliability. As a further note, out of 171 directed missions for the year, a reliability of 98.3% was maintained.

Our M & O facility was active during the year. The move to new quarters last spring slowed our productivity somewhat; however, our schedule showed the overhaul and shipment of nine Trackers, nine Driftsights, and three Eyepiece Knuckles, and the reworking, testing, and coating of an Elliptical Mirror. A number of other units were in various stages of repair at year end. In addition, we handled numerous other smaller items, including 57 scan motors, 103 film spools, 17 gear boxes, 9 intervalometers, domes, timer assemblies, brake bands, desiccators, etc. As of the end of the year, a total of twenty-four of the twenty-nine Trackers have been processed through our M & O facility,

with two additional arriving in January.

Scan Motors have been subject to further study and evaluation by us and the manufacturer. This has resulted in several changes being made, including a heavier-duty armature. These motors, when repaired and returned to us, are put through our strict Quality Control tests before they can be accepted and shipped to the field.

During the year, seven Service Bulletins were issued. Among these was the modification of Dome Assemblies (S/B T-31) which will enable us to reuse, instead of scrapping, many dome housings in which the attaching bolts have become loose.

During this period, a Proposal was submitted and accepted for a Timer Access Cover (PE-22). Another, for a Remote Exposure Control (PE-24) was also accepted, and it is presently undergoing final rigid acceptance testing before shipment.

Also during the year, we have reactivated and modified the Lens Image Evaluator test unit and have processed six 24" Lens Assemblies and two 36" Lens Assemblies. Processing involved a test run prior to disassembly, recoating, and further test runs for evaluation of the lens afterward, with, on several occasions, an analysis of the results obtained to determine changes necessary for improved resolution.

25X1A Last summer our Technical Representative [REDACTED] was replaced
25X1A by [REDACTED] who had been trained and was waiting for a field assignment. They both have done a very satisfactory job. As a back-up for our field service, we have trained personnel in our facility ready to fill in wherever necessary.

We are constantly striving to provide better support and higher reliability throughout the system.

EXHIBIT ITRACKER MONTHLY PERFORMANCE RECORD

MONTH	MISSION TOTAL	MALFUNCTIONS	RELIABILITY	FOOTAGE SCHEDULED	FOOTAGE COMPLETED
January	51	2	96%	37,280	36,680
February	55	5	91%	38,790	35,790
March	38	3	92%	25,660	24,000
April	13	1	92%	8,255	7,800
May	32	2	91%	24,255	22,905
June	41	2	95%	30,685	30,105
July	42	1	98%	33,036	32,235
August	34	2	94%	23,735	22,456
September	20	—	100%	14,335	14,335
October	32	1	97%	20,390	19,975
November	80	1	99%	38,685	38,385
December	63	3	95%	46,960	45,680
Totals	501	23	95.4%	342,065	329,346

HOURS OF OPERATION PER YEAR FOR TRACKER 195 thru 1962
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TRACKER S/N	1958	1959	1960	1961	1962	TOTAL SINCE MO
201	—	139.5	72.5	237	110	347
202	—	186	317	195	48	15
203	—	—	80.5	328	101	509.5
204	187	80	270	174	150	150
205	87	347	189	100	101	126
206	138	106	32	83	82	165
208	—	202	127	179	81	81
209	238	152	171	362	127	660
210	—	37	192	223	185	249
211	200	84	151	234	107	364
213	55	60	148	185	153	183
214	135	150	244	145	212	256
215	118	197	107	269	96	96
217	146	157	202	235	73	0
218	149	145	108	234	134	368
219	99	190	250	200	65	36
221	164	176	167	37	112	149
222	118	135	8	14	143	157
223	106	116	240	191	170	823
224	256	225	75	53	117	205
226	159	138	208	112	100	717
227	20	361	305	152	75	103
228	232	159	179	62	164	164
229	43	148	190	150	62	19
230	99	71	264	175	89	698
231	146	170	224	302	77	919
232	231	157	223	240	72	0
233	190	33	20	180	109	0
235	—	—	151	146	139	97

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MISSION RELIABILITY

<u>MALFUNCTION</u>	<u>NO. OF MALFUNCTIONS</u>	<u>CORRECTIVE ACTION</u>
Scan Lever jammed under Ratchet Pawl	5	Scan Pawl Modification per S/B T-25
Lost Small Loop	5	Replace Metering Lever
Switch Failure	3	Replace Switch per S/B T-27
Intervalometer	2	Returned for reworking under our turnaround program
Scan Motor	1	Replaced
Metering Belt Slippage	1	Replace Metering Belt
Miscellaneous	6	

Some of the more frequent trouble spots, and corrective action required, are:

1. - Scan Motors: Action taken as shown in Annual Report.
2. - Change Gear binding on shaft: Replacement of change gear and shaft. Our M & O policy now includes replacement of all change gear bushings.
3. - Film Spools: As a result of many problems involving damaged spools, a closer relationship has been established with the Warehouse and E.K. We have developed very high Quality Control standards in our test procedure, and each spool receives a second and final check before we package it. We have also instituted better packaging to prevent damage in transit.

It should also be noted that some mission failures are listed as malfunctions in the Tracker record, although the malfunction occurred in the vehicle - such as loss of power supply, failure of hatch heating system, etc.

EXHIBIT IV

TRACKER PERFORMANCE COMPARISON

<u>YEAR</u>	<u>TOTAL MISSIONS</u>	<u>MALFUNCTIONS</u>	<u>RELIABILITY</u>	<u>FOOTAGE COMPLETED</u>
1959	631	41	93.5%	394,636
1960	741	38	95.0%	519,185
1961	741	52	92.8%	525,972
1962	501	23	95.4%	329,346